

1. Factor the following quadratics, if possible. If a quadratic cannot be factored, justify your conclusion.

a. $x^2 + 9x + 18$

b. $4x^2 + 17x - 15$

c. $4x^2 - 8x + 3$

d. $3x^2 + 5x - 3$

e. $9x^2 - 4$

2. Solve for x

- a. What property must you use to solve all of these quadratics?

b. $x^2 - 7x + 10 = 0$

c. $2x^2 + 2x - 12 = 0$

d. $4x^2 - 1 = 0$

e. $x^2 + 6x - 40 = 0$

f. $2x^2 + 13x - 24 = 0$

- g. What does it mean to find roots?

3. For each quadratic function below write it in graphing form (vertex form). Then state the vertex of each parabola.

a. $f(x) = x^2 + 6x + 15$

b. $y = x^2 - 4x + 9$

c. $f(x) = x^2 + 8x$

4. Solve the following

a. $|-2r - 1| = 11$

b. $|1 - 5a| = 29$

c. $|-2n + 6| = 6$

d. $|v + 8| = 7$

5. Simplify the following

a. $\frac{12xy^2}{3x^4y^2}$

b. $(2x^3y)^4(5x^3y^2)$

c. $\frac{12x^{-4}y^2}{18x^3y^{-3}}$

6. Simplify the following

a. $(x + 3)^2$

b. $(y - 4)^2$

